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Language as a regional driver of the trade of place-sensitive products: The case of made-in-Italy goods

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Abstract

We investigate the relationship between language and international trade of place-sensitive products at a regional level. Focusing on 'made in Italy', we assess whether its trade is influenced by Italian migrants and organisations offering Italian language courses in the importing region. To analyse this relationship, we collected an original database of 147 regions, on which we estimated Poisson pseudo maximum likelihood regressions, also controlling for various country effects across trading regions. Results show that the trade of made-in-Italy goods is positively associated with the diffusion of the Italian language in the regions. This does not apply to goods produced in Italy that are not characteristic of 'made in Italy'.

Keywords: international trade; place-sensitive products; made in Italy; Italian migration; Italian language

JEL Codes: F14, R10, R23

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1. Introduction

The capacity of place-sensitive goods to win positions in international competition can be discussed and assessed from different angles. One large stream of literatures looks at the supply-side. It tries to understand how place-based cultural and organizational factors are effectively and efficiently absorbed in branded products and services that meet some generally defined needs for differentiation (e.g., for authenticity, beauty, distinction, high functionality) in the international markets (Brodbeck et al. 2002; Becattini and Rullani, 2004; Pyke, 2013; Accetturo et al., 2019; Crescenzi et al., 2021). Another large stream of literatures goes deeper on the demand-side. This is of course the field of international marketing (e.g., Koschate-Fischer, 2012; Aichner, 2014). They also include studies on international and interregional trade. In the latter, general lines of study concern the relations of international trade with drivers such as migrations, languages, and business or social networks. Let us recall some introductory details on such drivers.

First, according to the literature, sharing languages and cultures would foster commercial interchanges in international markets (Lohmann, 2011; Egger and Lassmann, 2012; Melitz and Toubal, 2014). Speaking the same language facilitates communication and, together with owning similar cultural traits, helps build trust between the parties of an exchange, thus lowering the transaction costs of the trade (Melitz, 2008; Bosker and Garretsen, 2010). Where the transaction concerns differentiated goods as place-sensitive products (i.e., goods that are strictly embedded within the territory from which they originate), the relation may become stronger (Rauch and Trinidade, 2012). Place-sensitive products have symbolic contents that are explicitly related to the language and culture of their place of origin. Therefore, knowledge of language and culture helps, on the demand side, to better understand the good and its value, as well as to increase the willingness to buy and pay for the good, the so-called "preference" effect (Gould, 1994; Egger and Lassmann, 2012; Rapoport, 2018). Universities and other educational organisations are critical instruments for spreading language and knowledge of a specific culture abroad (Rubino and Beconi, 2018) and are often linked to local communities of people interested in learning such a language and culture (Hajek and Baldwin, 2020).

The influence of migrations and migrant networks on the international trade has been discussed and empirically investigated, mainly at the national or state level (Rauch and Trinidade, 2012; Parsons and Vézina, 2018), less frequently at regional levels. Indeed,

that influence could be better analysed at the lower territorial levels thanks to the reduction of spurious combinations with factors that may operate at the country level, such as post-colonial ties (Combes et al., 2005). Migrant communities are critical channels for diffusing language and culture abroad (Vertovec, 2004; Moya, 2005; Fagiolo and Mastrorillo, 2014; Falck et al., 2016). Migrants integrate into their place of adoption by bringing their cultural and linguistic background, which often contaminates the host region (Vertotec and Wessendorf, 2006). For example, a study on French regions found that the imports of differentiated goods (defined as those that are not listed as commodities) grow with the presence of associated migrant communities; while, for commodities, the relation is significant only with countries of origin that show weak institutions and tend therefore to have high trading costs also in markets for standard goods (Briant et al., 2014).

The knowledge of a foreign language in a region can be supported and diffused thanks to educational and cultural organisations whose presence may have different motivations, beyond those related to the possible presence of a migrant community. On the other side, a migrant community has direct and indirect effects on the regional trade with the country of origin, even independently from the teaching of the language of the country of origin in the region of the community's settlement. However, teaching may amplify the direct and indirect impacts of the same settlement on trade.

Coming back to the theme recalled in the opening sentence, the capacity of place-sensitive goods to win positions in international competition could be assessed also by looking at matchings between the supply-side and the demand-side. We propose in this paper precisely to contribute to the study of this seemingly non-well-explored intersection. The key idea is to take a country that exhibits both a strong "made in" production pivoting on diffused place-based cultural and organisational factors, and a widespread network of migrant communities in many regions of the world, whose original settlements date back to periods antecedent the development of the same "made in". The exports of the "made in" to foreign regions can be more-or-less related to the presence of migrant communities. Furthermore, given the focus on a culturally enhanced "made in", i.e., a specific category of place-sensitive goods, it is particularly important to control also for the presence of organisations providing education on the language and culture of the country of origin in the importing regions. Indeed, both the migrant communities with their interpenetration in the material and cultural landscape of the region of settlement and the organizations providing foreign language and culture education are specific drivers of trade of place-sensitive products precisely because they

can operate as "cultural outposts" of the country of origin (Zukin, 2008; Barni and Vedovelli, 2012). Of course, it will be necessary to control the role they play on the "non-made in" exports from the same country, as well as to control for factors operating at the country level in the importing regions.

We apply our exploration to "made in Italy" goods (i.e., produced in Italy in the food, fashion and furniture sectors, and related machinery sectors), which is an international prominent case where language is a means of conveying images, suggestions and symbols that are non-marginal parts of the value of the same goods (Becattini, 1998; Fortis and Carminati, 2009). Italy is also a country with a large diaspora dating back to periods before or contemporaneous to the start-up of its industrialization paths in the second half of the nineteenth century (Del Boca and Venturini, 2013). We assess whether and to what extent the trade of made-in-Italy goods is influenced by the presence of Italian migrant communities and knowledge of the Italian language and culture in the region. Regarding the latter driver, we consider the availability of Italian courses (universities with an Italian studies' department, Italian lecturers and primary or secondary schools with an Italian section).

To analyse the relationship between international trade and the two language-related drivers at the regional level, we have built an original dataset on the flows of made-in-Italy goods from Italy to the regions of many European and non-European countries. Based on this database, we estimated Poisson pseudo maximum likelihood (PPML) regressions (Santos Silva and Tenreyro, 2006). Our analysis adds some novelty also to the existing debate on international trade at the regional level (Gil et al., 2008; Brodzicki and Uminski, 2018; Barbero et al., 2021); moreover, to the best of our knowledge, the contributions to regional linguistic drivers of international trade are almost non-existent.

The rest of this paper is structured as follows. Section 2 reviews the literature on international trade that assumes a regional perspective and elaborates on the role played by language and migrations in international trade. Section 3 describes the empirical setting and the hypotheses of the study by illustrating the definition of made-in-Italy products. Section 4 presents the data used in the empirical analysis, and the methodology adopted. Section 5 illustrates the results of the analysis, and section 6 includes several robustness checks. Section 7 concludes the study and provides some policy implications.

2. Literature review

2.1. Regions and international trade

The literature on international trade usually assumes a national perspective. Countries, however, have relevant heterogeneity at sub-national levels (Courant and Deardorff, 1992), and trade flows can be highly unequal across regions (Rodriguez-Pose, 2012). The determinants of these flows might differ according to heterogeneous place-based conditions. Nevertheless, there are few analyses of trade flows at the regional level, partly due to the difficulty of acquiring related data (Lahr et al., 2020).

Many contributions to trade below the country level concern federal states, such as the United States (Head and Mayer, 2002; Cassey, 2011, 2014), Mexico (Escobar Gamboa, 2010), and Brazil (Daumal and Zignano, 2010; Siroen and Yucer, 2011; Bottasso et al., 2018). Some studies have focused on trade between regions located on the border between different countries, indicating that borders have a negative influence on trade (van Wincoop, 2003; Olayele, 2019). For example, Brown and Anderson (2002) compared province-to-state trade with state-to state trade of the United States and Canada and they found that border remains a significant barrier to trade.

Other studies have compared trade among regions in the same country with foreign exports. For example, Gil-Pareja et al. (2005) found that Spanish regions trade more with the rest of Spain than with other foreign countries (see also Ghemawatt et al., 2010). Llano-Verduras et al. (2011) found that intra-national trade flows are highly localised, with value decreasing with distance.

A small group of studies analysed the reasons of the heterogeneity between regions in trade flows. Gil et al. (2008) studied the role played by regional trade agencies abroad for Spanish regional trade and they found that regional trade agencies increase trade also more than embassies and consulates. Marquez-Ramos (2016a) investigated exports from 19 Spanish regions to 45 countries and she confirmed the relevance of the port facilities themselves for international trade but also those located in neighbouring regions. Marquez-Ramos (2016b) explored the effect of trade agreements on trade flows from regions in Argentina, Brazil, Poland and Spain to a sample of importing countries, indicating different effects for different agreements. Focusing on Poland, Brodzicki and Uminski (2018) proved that heterogeneity in regional trade can be explained by the presence of metropolitan areas as well as historical links with foreign countries. Brodzicki et al. (2020) found that regional path dependence, quality of regional institutions and core-peripheral status of regions play relevant roles in

explaining such trade flows. Similarly, Barbero et al. (2021) found that differences in regional government quality affect trade across EU regions.

Several studies have focused on the role of migrants in trade (Gould, 1994; Head and Ries, 1998; Kugler and Rapoport, 2011; Fagiolo and Mastrorillo, 2014; Rapoport, 2018a), but only few of them elaborated at a regional level. Among them, Bratti et al. (2018) found that the presence of immigrants and entrepreneurial immigrants (who run their own firms) living in Italy generates an increase in export flows from the Italian NUTS-3 regions (Italian provinces) where they settle to their countries of origin. Looking at Spanish provinces at the NUTS-3 level, D'Ambrosio and Montresor (2020) found that emigrant flows have a stronger effect than immigrant flows in explaining export flows.

In what follows, we will specifically consider the role of migrants and language. Our discussion, indeed, will focus on the largely under-investigated role played by linguistic factors in explaining the heterogeneity in regional trade flows.

2.2. Linguistic drivers of regional trade

Language is a means through which social identities and beliefs are built across different agents (Ginsburgh and Weber, 2020); it is a basic component of culture (Bourdieu, 1986). Thus, it is a relevant determinant of economic activity (Marschak, 1965).

Language is also linked to international trade (Rauch and Trinidade, 2002; Egger and Lassmann, 2012; Melitz and Toubal, 2014; Accetturo et al., 2019) for various reasons. First, a place whose language is widely spoken is likely to be actively inserted into international trade, mainly due to the reduction in the transaction costs implied by the relative ease of communication with the outside world (Lohmann, 2011; Solheim, 2016). Transaction costs can also be contained because two trading partners speaking the same language might be able to understand better each other's preferences and beliefs and adjust their behaviour accordingly (Melitz, 2008).

Second, language can affect the way in which some goods and services are perceived by potential consumers (Reuchamps et al., 2013). According to the literature on place-sensitive products (Crescenzi et al., 2021) and on the debate on the 'made-in' and 'place-of-origin' effects (Abraham and Patro, 2014), goods with strong links with places of production often contain linguistic and cultural signs that are directly associated with those places, and these signs are an instrument for signalling their nature and value (Lazear, 1999; Pierce et al., 2011; Pike, 2013; Abraham and Patro, 2014). Local trademarks, collective brands, geographical indications and place branding strategies are all tools used to communicate to the consumer the link between the product and its

place of origin (Mendonça et al., 2004; Kasabov and Sundaram, 2013; Kavaratzis and Kalandides, 2005; Oliveira, 2015; Cleave et al., 2016; Myles and Filan, 2019; Panzera et al., 2020). Potential buyers who know the language and culture of the place where these products originate can better understand the symbolic content of these products and evaluate their value (Egger and Lassmann, 2015). Such knowledge can influence their willingness to buy and pay for these goods (Koschate-Fischer, 2012).

Many factors can facilitate the dissemination of knowledge of the language and culture of place-sensitive products. The most important ones have a specific regional characterisation, as they emerge and have an effect within the institutions and organisations of a circumscribed territory, such as a region. We refer to these factors as regional language-related drivers of trade.

The first driver is that of migrant communities (Rapoport, 2018b). On the one hand, migrants are important buyers of products coming from their place of origin, as these products are familiar and often perceived as having a higher quality or better taste than those produced in other places (Gould, 1994; Rapoport, 2018b). Products with a specific place of origin are a link to the culture and language of origin that migrant communities might wish to maintain, often for several generations (Petraglia and Vecchione, 2020). Migrants are also a means by which the language and culture of the country of origin spread to the host region (Vertovec, 2004; Vertovec and Wessendorf, 2006; Kugler and Rapoport, 2011). Migrants who participate in the life of the community in which they settle (e.g., migrant associations that organise cultural events of different types in the host region) are ambassadors of the culture and language of their place of origin (Rauch and Trinidade, 2002). They can disseminate information about the products of their homeland and how they should be consumed (Rabikowska, 2010; Parsons and Vézina, 2018). They can provide a linguistic and cultural context for 'made in' products that can facilitate their purchase by buyers in the host region. This driver has regional specificity as the activity of migrants and their possible associations is developed in the specific territorial context of the community of settlement. Moreover, the same localisation of migrant communities has regional features in the country of destination because successive waves of migration tend to concentrate in the places of previous waves (Djajic, 2003).

The second driver is that of the various educational organisations that provide foreign language courses abroad, such as cultural institutes, schools, or universities. Here, in addition to language, students can also learn about the culture of a country, its values, its history, and its typical products (Baldini, 2015; Bouvet et al., 2017; Rubino and

Beconi, 2018). Therefore, these organisations contribute to the spread of different cultures and languages in the host country (Bouvet et al., 2017; Lien and Lo, 2017). These effects may be strengthened by linguistic and cultural research, as well as by the involvement of students in internship programmes with firms linked to the language they are studying (Rubino and Beconi, 2018). Language students, both graduates and undergraduates, can become a powerful channel of information on the consumption of goods produced in the country whose language they are studying.

Universities and schools do not operate in an abstract space but within communities that have an important place-based dimension (Benneworth et al., 2017). For this reason, they can be an important driver of trade in goods that are produced in homeland of the language on which they conduct research and teach.

3. Empirical setting and hypotheses

We focus on the regional import of made-in-Italy products. These products are defined as the bundle of goods produced in Italy in the food, fashion, and furniture sectors and in the production of machineries that are used to produce in these sectors (e.g., coffee machines or textile machinery) (Fortis and Carminati, 2009; see also Becattini, 1998; Becattini and Menghinello, 1998). In statistical classifications of economic activities, the latter sectoral aggregate is often referred to as special-purpose mechanics or instrumental mechanics.

These products largely benefit of advantages driven by differentiation from other (similar and/or competitive) products on the marketplace, in line to what suggested by literature on trademarks (Castaldi and Mendonça, 2022). Specifically, made-in-Italy goods draw extensively on symbols, stereotypes and suggestions that are rooted in specific places, stimulate expectations and provide information to the consumer (Bellandi et al., 2021). In fact, the production of made-in-Italy goods is often embedded in places with specific historical, institutional, social and business features, which are fundamental carriers of symbolism and identity (Becattini and Rullani, 2004). Such symbols are used to promote products in international markets, often using the Italian language and various symbols of *Italianness* (Turchetta, 2005; Barni and Vedovelli, 2012). In fact, 'Made in Italy' is considered one of the most remarkable examples of geographical branding, in which language is a means of conveying images, suggestions and symbols that become part of the goods themselves (Bertoli and Rescinti, 2013).

A focus on the Italian case is salient in our study from the linguistic viewpoint, since it allows us to precisely address the intersection illustrated in the introduction. In fact,

Italy has various linguistic (and cultural) representatives abroad. First, the migration of Italy has been more intense than that of many other countries (Del Boca and Venturini, 2003); thus, this channel of language and culture transmission has been (and still is) vital, both with and without the influence of Italian middlemen (Petraglia and Vecchione, 2020). Moreover, Italians abroad can be relevant buyers of made-in-Italy goods. Those working as distributors of Italian products (e.g. in restaurants) can further stimulate the trade of made-in-Italy products (Cinotto, 2019).

Second, the Italian language is largely studied outside of Italy. According to MAECI (2019) in 2018, more than two million people in 119 countries studied Italian. Furthermore, the presence of departments of Italian studies and Italian lecturers offering Italian courses (Hajek and Baldwin, 2020) and the presence of Italian sections in foreign, bilingual, or international schools (in primary or secondary schools; see MAECI, 2019) are rather diffused (Campa, 2019).

Based on the review of the theoretical and empirical literature presented above, we hypothesise the following:

- Hypothesis 1: *The presence of Italian migrants' communities in the importing region is positively associated with the trade of made-in-Italy products.*
- Hypothesis 2: *The presence of organisations providing Italian language courses in the importing region is positively associated with the trade of made-in-Italy products.*

4. Methodology and data

4.1. Econometric model

We use regional trade statistics to estimate the relation between the presence of regional linguistic drivers in the importing regions and the value of their imports of made-in-Italy products. As in other contributions about regional trade we implement a study on the unilateral exchange specification (Nicolini, 2003). Specifically, in our interaction data, the exporter entity is a country (Italy), and the importing regions are those belonging to the 10 countries with relevant imports of made-in-Italy products. Thus, we have variations within the 10 countries in one of the trade dimensions.

To carry out our estimation, we follow Santos Silva and Tenreyro (2006) and implement PPML regressions. They are useful in the present case because they can be applied to any dependent variable with non-negative values without having to explicitly specify a distribution for the dependent variable (Correia et al., 2020). They use robust standard errors to mitigate concerns about heteroskedasticity (a common problem with

traditional OLS estimators that can lead to inconsistent estimations). Moreover, unlike other methods (e.g. the log-linear model), PPML regressions provide a natural approach to deal with zero values for the dependent variable (something common in the case of trade data). This model is increasingly used for investigating trade data (Bosker and Garretsen, 2010; Santos Silva and Tenreyro, 2011; Brakman et al., 2017) at the regional level (Marquez-Ramos, 2016a; Brodzicki and Uminski, 2018; Olayele, 2019; Brodzicki et al., 2020; Barbero et al., 2021) or from a single exporter (Johnston et al., 2015; Lien et al., 2019). Our estimations are carried out in STATA.

4.2. Data

Data on the trade of made-in-Italy products across regions were collected from the national statistical offices of the countries to which the regions being studied belong. Following direct enquiries to the various statistical offices, we were able to collect information on 147 regions/territories in 10 countries. We collected data at the finest possible level. In particular, Australian data were collected on eight states and territories (Australian main statistical area structure). Austrian, French[1], Portuguese and Spanish data were collected at the NUTS-2 level (European basic regions). Belgian, German[2] and UK (former classification, before Brexit) data were collected at the NUTS-1 level (European major socio-economic regions). Canadian data were collected from 10 provinces (Canadian major political units). USA data were collected from 50 states and Washington D.C.[3]

In particular, we collected data on the value of regional imports from Italy in 2019[4], in the specific industries belonging to made-in-Italy sectors.[5] These data are satisfactory

[1] Seventeen out of twenty-seven French NUTS-2 level regions in the 2016 classification were grouped in eight regions due to data availability. For the same reason, French overseas departments were not included. Thus, we had information on thirteen French regions.

[2] Data on Sachsen-Anhalt region were not available.

[3] Reference sources for trade data included Australian Bureau of Statistics for Australian territories, Bundesanstalt Statistik Österreich - Statistics Austria for Austrian regions, Belgian Foreign Trade Agency for Belgian regions, Statistique Canada – Statistics Canada for Canadian regions, data.gouv.fr for French regions, Destatis Statistisches Bundesamt – Office of National Statistics for German regions, Instituto Nacional de Estatistica – Statistics Portugal for Portuguese regions, Estadísticas del comercio exterior español – Statistics of Foreign Trade for Spanish regions, Office for National Statistics for UK regions and United Stated Census Bureau for USA states.

[4] In 2019, the last year before the breakout of the pandemic, the Italian international export was in a state of steady growth, to which almost all made-in-Italy sectors contributed (ICE, 2020).

[5] We referred to the Harmonized System code as the global product classification system. The codes involving made-in-Italy products were 01-24, 33, 34, 37, 41, 43, 44, 49, 50 to 67, 69 to 71, 82, 89, 91, 96, 2530, 7321, 8432 to 8438, 8444 to 8453, 8456 to 8467, 8471 and 9014.

for the purpose of our study because they refer to regions belonging to 10 of the first 15 countries in terms of the monetary value of imports of made-in-Italy goods. These importing regions are heterogeneous in terms of the imported values of made-in-Italy products.

Data on Italian emigrates across different regions were collected from national statistical offices of the countries to which the regions being studied belong.

Data on Italian Studies departments were extracted from universities' websites, as well as from specialised catalogues of Romance studies. We considered departments not only based in large research-intensive universities, which usually can be found in large cities, but also those based in small vocational colleges that are more geographically dispersed across countries' regions. Data on the presence of Italian lecturers in foreign universities and Italian sections in schools abroad were retrieved from the Italian Ministry of Foreign Affairs[6].

Data on the geographical distance between Italy and all regions under investigation were computed as the distance between the centroids—the central points—of Italy and those of each individual region. Data on regional GDP per capita (at current market price in 2019) and those on regions and territories hosting capital cities were collected from the official statistical offices of each country to which the regions under study belonged. Data on border regions were retrieved from Eurostat.

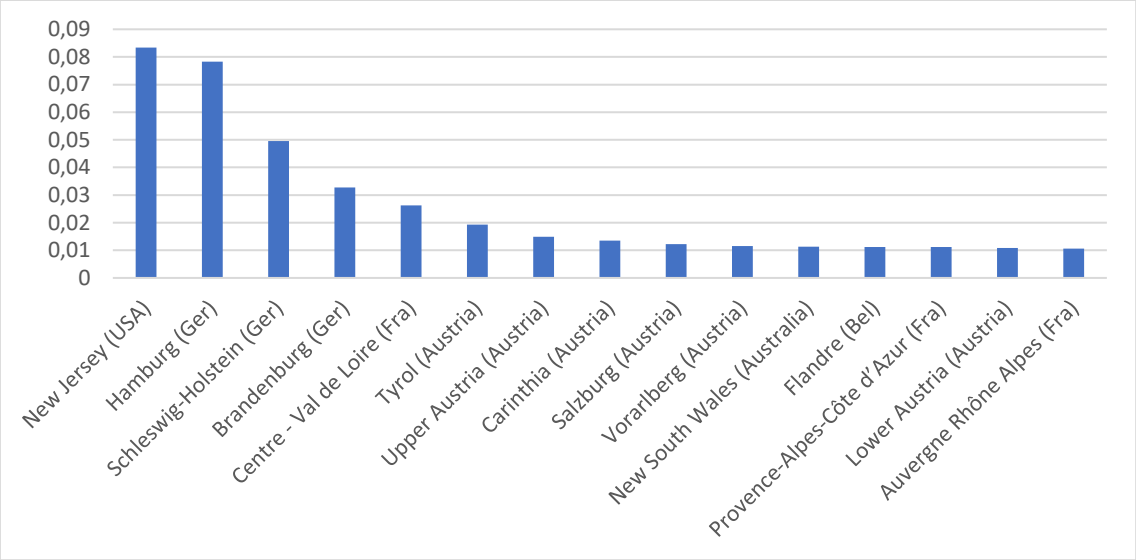
4.3. Variables

The dependent variable is the value of the import of made-in-Italy products by the regions under study in 2019. Figure 1 shows the first 15 regions in terms of total import

[6] Particularly, there were 81 departments of Italian studies and Italian lecturers offering courses across regions in the EU countries under investigation, 55 across Canadian provinces, 29 across regions in the UK, 65 across different states in the US. Data about Australia were available only for Italian lecturers, they were 6 across different territories. There was 1 Italian section in foreign, bilingual or international schools (primary, secondary and high schools) in Australia, 41 across regions in the EU countries under investigation, and 1 in the US. We checked the following public catalogues and websites to extract data on the presence of Italian departments within universities in regions abroad as well as universities providing Italian language education: the website of the Italian Embassy in Ottawa for Canada; the list of American Universities with Italian studies department from Wikipedia and the Modern Language Association (MLA) for the US; the Italian-Germanic association "Deutsher ItalianistenVerband (DIV)" for Germany and Austria; the "Complete University Guide 2021 – Italian studies" available from The Complete University Guide website for the UK. We also manually checked each university's website of Belgium and France. In the case of Belgium, we began our research from the list of Belgium Universities retrieved from the "Times Higher Education" website and in the case of France from the list of French Universities retrieved from the website of the French Ministry for Higher Education, Research, and Innovation. We extracted the number of Italian lecturers abroad from the website of the Italian Ministry of Foreign Affairs. Finally, the number of Italian Schools and Sections of Italian in schools abroad are retrieved from the report "Scuole e sezioni italiane nel mondo a.s. 2017/2018" available on the website of the Italian Ministry of Foreign Affairs.

of made-in-Italy products. For descriptive purposes and to compare different territorial entities, we computed the import-to-GDP ratio (shown on the Y-axis). The picture presents a quite diffused geographical distribution of the most relevant importers of made-in-Italy products globally, with US, Australian and several European territories ranking among the first 15.

Figure 1. Most relevant regions for import intensity of made-in-Italy products



We also collected data on the relevant sub-groups of made-in-Italy products (i.e. food, fashion and special-purpose machineries)[7]. Figures A1–A3 in the Appendix show the first 15 regions in terms of import of made-in-Italy food, fashion, and special-purpose machinery, respectively.

The dependent variables were included in the model without any transformation, as requested by the PPML estimation technique applied to trade data, except for the fact that they were divided by 1000000.

To investigate the first regional driver of made-in-Italy goods (i.e., migration), we define the variable *Italian Migration,* which measures the presence of Italian immigrants in the region. The model includes the inverse hyperbolic sine transformation of the original values as an alternative transformation to the logarithmic transformation in the presence of zero values (Bellemare and Wichman, 2020).

[7] The value of furniture, which is traditionally included in typical made-in-Italy sectors, is easily distinguishable from the rest of the 'made in Italy' only in a few countries' statistics, so we did not consider it in the subgroups.

To investigate the second regional driver of made-in-Italy products, the diffusion of courses of Italian language and culture, we define two binary variables. The variable *Italian Universities* detects the presence of departments of Italian studies and Italian lecturers offering courses in Italian. In this case, data were collected by investigating universities' websites one-by-one and controlling for the information present in specialised catalogues of Romance studies. *Italian Schools* detect the presence of Italian sections in foreign, bilingual, or international schools (primary, secondary and high schools; see MAECI, 2019).

We also controlled for the geographical distance between the importer (Italy) and the different regions under study (variable *Geographical Distance*) and, with the GDP per capita at the regional level (*GDP PC*), for regional wealth. Both control variables were included as the inverse hyperbolic sine transformation of the original values.

We added several dummy variables to control for factors associated with international trade. The variable *Euro Currency* takes on the value of 1 if the official currency of the region is the same as that of Italy (Euro) and 0 otherwise. The variable *Capital* aims at controlling for the fact that regions hosting capital cities are those in which several organisations, representatives of foreign countries, are located (e.g., embassies and national trade agencies). Regions with capital cities are coded with 1; otherwise, they are coded with 0. The variable *Border* considers the fact that two adjacent regions are more likely to trade than those not located on the border. All regions included in the study that are at the Italian border are coded with 1; otherwise, they are coded with 0. Finally, we built the variable *Remoteness* to deal with multilateral resistance. This variable captures the extent to which regions are separated from other potential trade partners, building on the idea that more remote places, for example, could have higher shipping costs and import prices (Navas et al., 2020). In particular, this variable is computed for each region as the distance-weighted sum of the market sizes of all trading partners, where the market size is proxied by the GDP (Manova and Zhang, 2012).

Table 1 shows the descriptive statistics of the variables included in the models, while Table 2 shows the correlations among such variables.

Table 1. Descriptive statistics

Variables	(1) N	(2) mean	(3) sd	(4) Min	(5) max
Trade Total	147	679.9	984.9	0.0911	4,931
Trade Food	147	167.1	276.0	0	1,475
Trade Fashion	147	276.9	497.8	0	3,267
Trade Special mechanics	147	235.9	341.6	0	1,960
Italian Migration	147	8.196	2.312	0	12.68
Italian Schools	147	0.0884	0.285	0	1
Italian Universities	147	0.571	0.497	0	1
Geographical Distance	147	8.843	0.887	7.125	10.39
GDP PC	147	11.10	0.715	8.360	14.11
Euro Currency	147	0.449	0.449	0	1
Capital	147	0.0680	0.253	0	1
Border	147	0.0340	0.182	0	1
Remoteness	147	46.97	0.338	46.56	48.07

Trade Total, *Trade Food*, *Trade Fashion* and *Trade Mechanical engineering* are the total values divided by 1000000, and *Italian Migration*, *Geographical Distance*, *GDP PC* and *Remoteness* are transformed with the inverse hyperbolic sine before computation of the descriptive statistics. *Italian Universities, Italian Schools*, *Euro Currency*, *Capital* and *Border* are binary variables.

Table 2. Correlation matrix for total trade flows

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
(1) Trade Total	1.000									
(2) Italian Migration	0.540	1.000								
(3) Italian Universities	0.420	0.529	1.000							
(4) Italian Schools	0.618	0.425	0.270	1.000						
(5) Geographical Distance	-0.295	-0.052	-0.231	-0.246	1.000					
(6) GDP PC	0.046	0.050	0.003	0.077	0.105	1.000				
(7) Euro Currency	0.214	0.053	0.036	0.249	-0.831	-0.232	1.000			
(8) Capital	0.183	0.229	0.125	0.106	-0.075	0.321	0.082	1.000		
(9) Border	0.114	0.044	0.163	0.206	-0.296	0.058	0.208	-0.051	1.000	
(10) Remoteness	0.113	0.109	0.020	0.146	-0.191	-0.127	0.351	0.091	0.093	1.000

5. Results

5.1. Made-in-Italy goods

Interpretations of coefficients obtained by PPML estimations are equivalent to those estimated with ordinary least squares (OLS) regressions with dependent variables in logs. As already mentioned, we calculated the inverse hyperbolic sine transformation of some variables. Coefficients involving transformed variables should be interpreted in the same way as those based on a standard logarithmic variable, but they have the advantage of remaining defined for zero values (Bellemare and Wichman, 2020). Model (1) in Table 3 focuses on the role played by the first driver (i.e., the presence of Italian migrants (*Italian Migration*) across non-Italian regions), and it tests Hypothesis 1. Model (2) focuses on the second driver (i.e., the presence of institutions offering Italian language courses (variables *Italian Universities* and *Italian Schools*) in the regions under study), and it tests Hypothesis 2. Finally, Model (3) includes all variables previously analysed in the first two model specifications.

Table 3. PPML estimations: specifications on total export of made-in-Italy products

Variables	(1) Total MiIT products (PPML)	(2) Total MiIT products (PPML)	(3) Total MiIT products (PPML)
Italian Migration	0.435***		0.302***
	(0.0526)		(0.0748)
Italian Universities		1.182***	0.515*
		(0.254)	(0.289)
Italian Schools		1.184***	0.536**
		(0.209)	(0.246)
Geographical Distance	-0.548***	-0.310**	-0.469***
	(0.166)	(0.157)	(0.161)
GDP PC	-0.0214	-0.0407	-0.0694
	(0.179)	(0.222)	(0.178)
Euro Currency	-0.311	-0.243	-0.358
	(0.301)	(0.296)	(0.310)
Capital	-0.0415	0.285	0.0488
	(0.280)	(0.338)	(0.271)
Border	-0.216	-0.348	-0.352*
	(0.208)	(0.236)	(0.202)
Remoteness	0.184	0.161	0.134
	(0.224)	(0.290)	(0.210)
Constant	12.86	14.93	15.80
	(11.34)	(15.04)	(11.00)
Observations	147	147	147
R-squared	0.551	0.462	0.584

Robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

In Models (1) and (2), the findings present positive and statistically significant coefficients of our core variables related to the Italian language, suggesting that both the first and second drivers are positively associated with the regional import of made-in-Italy products. Thus, both Hypotheses 1 and 2 are confirmed. Estimates included in Model (3) confirm this result.

The variable *Italian Universities* loses its significance in Model (3), in which Italian migration is also present. This might be because, following Hajek and Baldwin (2018), university departments in which a certain language is taught often sprung up in places where there was a community of migrants speaking that language. This might also have occurred in relation to schools.

A greater geographical distance is negatively associated with the import of made-in-Italy products. However, the estimates in Model (3) suggest that regions on the Italian border are negatively associated with the import of made-in-Italy products. As shown in Figure 1, the main buyers of made-in-Italy products are European (mostly German) regions that do not border Italy.

Table 4 presents estimations distinguished by relevant sub-groups of made-in-Italy sectors.

Table 4. PPML estimations: heterogeneity analysis

VARIABLES	(1) MiIT food (PPML)	(2) MiIT food (PPML)	(3) MiIT food (PPML)	(4) MiIT fashion (PPML)	(5) MiIT fashion (PPML)	(6) MiIT fashion (PPML)	(7) MiIT mechanics (PPML)	(8) MiIT mechanics (PPML)	(9) MiIT mechanics (PPML)
Italian migration	0.498*** (0.0714)		0.286*** (0.101)	0.440*** (0.0772)		0.371*** (0.0966)	0.388*** (0.0447)		0.239*** (0.0582)
Italian Universities		1.838*** (0.282)	1.227*** (0.310)		0.722* (0.381)	-0.0835 (0.410)		1.363*** (0.220)	0.816*** (0.257)
Italian Schools		1.302*** (0.196)	0.651** (0.276)		1.301*** (0.281)	0.565* (0.330)		0.934*** (0.247)	0.408 (0.251)
Geo Distance	-0.817*** (0.209)	-0.498** (0.206)	-0.659*** (0.202)	-0.634*** (0.206)	-0.514** (0.218)	-0.665*** (0.212)	-0.320* (0.182)	-0.0209 (0.166)	-0.170 (0.177)
GDP PC	0.0139 (0.214)	0.0145 (0.253)	-0.0287 (0.212)	-0.160 (0.193)	-0.212 (0.250)	-0.236 (0.195)	0.120 (0.215)	0.118 (0.234)	0.0987 (0.209)
Euro Currency	-0.679* (0.364)	-0.504 (0.338)	-0.638* (0.361)	-0.215 (0.389)	-0.374 (0.400)	-0.453 (0.398)	-0.181 (0.324)	0.0824 (0.317)	-0.0548 (0.341)
Capital	-0.454 (0.295)	-0.125 (0.341)	-0.334 (0.291)	0.554* (0.319)	0.949** (0.389)	0.657** (0.301)	-0.759* (0.413)	-0.480 (0.425)	-0.676* (0.392)
Border	-0.157 (0.207)	-0.302 (0.254)	-0.303 (0.204)	-0.0740 (0.239)	-0.168 (0.237)	-0.221 (0.269)	-0.554** (0.259)	-0.703** (0.329)	-0.667** (0.262)
Remoteness	0.332 (0.339)	0.268 (0.431)	0.266 (0.348)	-0.184 (0.402)	-0.309 (0.519)	-0.249 (0.374)	0.384** (0.189)	0.426* (0.226)	0.366* (0.190)
Constant	-7.808 (17.12)	-4.803 (22.10)	-4.749 (17.83)	17.47 (19.41)	26.21 (25.57)	22.39 (18.26)	-14.50 (9.771)	-16.83 (11.84)	-14.10 (10.07)
Obs	147	147	147	147	147	147	147	147	147
R-squared	0.574	0.544	0.622	0.471	0.373	0.505	0.431	0.384	0.461

Robust standard errors in parentheses. *** p < 0.01, ** p < 0.05, * p < 0.1.

Models (1) – (3) present the results on made-in-Italy food; Models (4)–(6) present the results on made-in-Italy fashion, and Models (7)–(9) present the results on made-in-Italy special-purpose mechanics. The first driver, represented by the densities of Italian migrants across the regions under study, is positive and statistically significant across all specifications, confirming the findings obtained with total made-in-Italy trade.

In addition, the presence of Italian Studies departments and Italian schools in the regions under analysis (i.e., our second driver) is positive and statistically significant. This supports the idea that Italian language courses constitute a crucial channel for raising knowledge of Italian products (Baldini, 2015). The significance is weaker in the case of made-in-Italy fashion products. For example, in the case of Model (6), the estimate of the variable *Italian Universities* is not statistically significant, and the coefficient of Model (5) is lower than that of the other products. This could be because, while the food sector has maintained a solid territorial origin, the Italian fashion sector is driven by multinational brands with a territorial identity that is weaker than their brands. In the case of Model (9), where the dependent variable is the trade of made-in-Italy special-purpose machinery, the estimate of the variable *Italian Schools* is not statistically significant. For this reason, we cannot interpret their specific estimates with confidence.

Estimates of geographical distance between Italy and the regions under study are negative and statistically significant from Model (1) to Model (6), while distance does

not particularly influence the trade of special-purpose mechanics. Two of the three specifications in which the dependent variable is made-in-Italy food present a negative and statistically significant estimate of the variable *Euro Currency*. This is probably because made-in-Italy food products are very well-known in distant places in North America, Australia or even the United Kingdom, where other currencies are adopted.
Hosting a capital city has a positive association with the trade of made-in-Italy fashion (Models (4) – (6)) and a negative influence on special-purpose machinery. This is consistent with the fact that the final consumers in the urban capitals are buyers of Italian fashion, while the main buyers of mechanical tools are producers who generally reside in manufacturing districts outside large urban areas. Such buyers are not located in the regions bordering Italy (see the variable *Border* in Models (7) – (9)). Finally, the coefficients for *Remoteness* are positive and statistically significant when the dependent variable is made-in-Italy machineries (Models (7) – (9)). This estimate suggests that *ceteris paribus* it can be relatively easier to trade such products with remote trade partners, which possibly operate in less competitive markets (Navas et al., 2020).

5.2. Results for the non-made-in-Italy goods

Finally, we implemented the same specifications as in the models presented in Table 3 but using the Italian export of all non-made-in-Italy products as the dependent variable to determine the extent to which the results obtained are specific to "made in Italy" or apply more generally to all Italian exports. The findings are presented in Table 5. The estimates are quite different from the ones obtained in the case of made-in-Italy goods. In particular, the variables *Italian Schools* and *Italian Migration* are not statistically significant. A comparison with the estimates related to made-in-Italy products (Table 3) suggests that most linguistic aspects under study are specifically valid only in the case of made-in-Italy products. However, the presence of a university in which Italian is taught has a positive influence on the export trade of Italian goods even not included in the made-in-Italy list. This result, which might be related to the open and extended networks of interest formed around universities, requires further investigation, to be deferred to future research.

Table 5. PPML estimations: specifications on total export of not made-in-Italy products

Variables	(1) NON-MiIT Products (PPML)	(2) NON-MiIT Products (PPML)	(3) NON-MiIT Products (PPML)
Italian Migration	0.0969		0.171
	(0.0946)		(0.177)
Italian Universities		3.103***	2.797***
		(0.445)	(0.476)
Italian Schools		-1.661	-2.096
		(1.387)	(1.667)
Geographical Distance	-0.952***	-0.506	-0.530
	(0.329)	(0.377)	(0.355)
GDP PC	1.384***	2.022**	1.998**
	(0.457)	(1.003)	(1.009)
Euro Currency	1.708	2.543*	2.459*
	(1.256)	(1.442)	(1.360)
Capital	-0.864*	-1.444	-1.689
	(0.511)	(0.960)	(1.174)
Border	-1.429***	-1.914**	-1.639**
	(0.542)	(0.841)	(0.754)
Remoteness	-1.265	-0.660	-0.195
	(1.936)	(1.712)	(1.129)
Constant	56.65	15.17	-7.392
	(87.50)	(71.31)	(44.57)
Observations	147	147	147
R-squared	0.085	0.297	0.328

Robust standard errors in parentheses. *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

6. Robustness tests

Table A1 presents two alternative models for estimating all variables previously included in the econometric exercise. In particular, OLS and quantile regression (QR), computed as median regressions, are implemented for each specification of the full models previously included in Tables 3 and 4.

In general, estimations implemented with alternative methodologies confirm the results regarding core variables about linguistic factors associated with the international trade of made-in-Italy goods across non-Italian regions. However, the variables accounting for the presence of Italian sections in schools at the primary or secondary level retain statistical significance only in Models (1), (5) and (7). In these cases, they always confirm already acknowledged results.

As an additional measure of our core variables on linguistic representatives, Table A2 includes an alternative independent variable in the full models of total made-in-Italy export, as well as on food, fashion and mechanical engineering. In particular, following relevant literature suggesting that cultural institutes play a role in explaining international trade flows (Lien and Lo, 2017; Gosh et al., 2017), we investigate if and to what extent the presence of Dante Society (as the most relevant Italian cultural

institutes abroad) across the regions under study is associated with the international trade of made-in-Italy products.

In each specification, the inclusion of this new variable does not provide statistically significant estimates; thus, we cannot interpret their meanings with confidence. However, they do not generally affect already acknowledged estimates obtained with other variables included across different specifications.

7. Conclusions

We empirically investigated the association between relevant place-based cultural and organisational factors as those related to language education, migrations and the international trade of place-sensitive products, focusing on 'made in Italy'. Our findings show that the presence of Italian migrant communities, the presence of Italian Studies departments and/or Italian lecturers and that of Italian sections in primary and secondary schools at the regional level outside Italy are positively associated with the trade of made-in-Italy goods. This is true for all subgroups of made-in-Italy products.

At the same time, the diffusion of the Italian language does not have a peculiar association to the trade of goods, which, although produced in Italy, are not characteristic of 'made in Italy'. This suggests that language-related factors can support trade, especially in the case of goods that have a high symbolic content (e.g., made-in-Italy shoes) or a strong reference to the territory (e.g., made-in-Italy agri-food products).

The findings of the present study can also have implications for other cases of 'made in'. In fact, the implications extend beyond specific cases of 'made in', as language-related symbols are increasingly used by producers globally to market products in the international context (Heller, 2010), emphasising their authenticity and originality to create profitable niches in markets that are saturated with goods.

Our analysis can be of interest to policymakers involved in designing specific measures for protecting, enhancing, and diffusing the image of places and their productive systems. Our results suggest that, in addition to trade policy, policymakers who are willing to promote 'made-in' products can use tools such as language policy and strategies for maintaining links with migrant communities in foreign regions. Moreover, the results can be of interest to managers involved in the promotion of place-sensitive products, which are often advertised through linguistic and cultural tools.

From a theoretical viewpoint, this paper contributes to a better understanding of the current geography of languages, related cultures and 'made ins' across places globally.

We suggested an original approach to assess how geographies of trade are intimately connected to place-based intangibles, such as language and cultural bridges. To the best of our knowledge, this contribution is one of the first to address such themes from a regional perspective.

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Appendix

Figure A1. Most relevant regions for import of made-in-Italy food

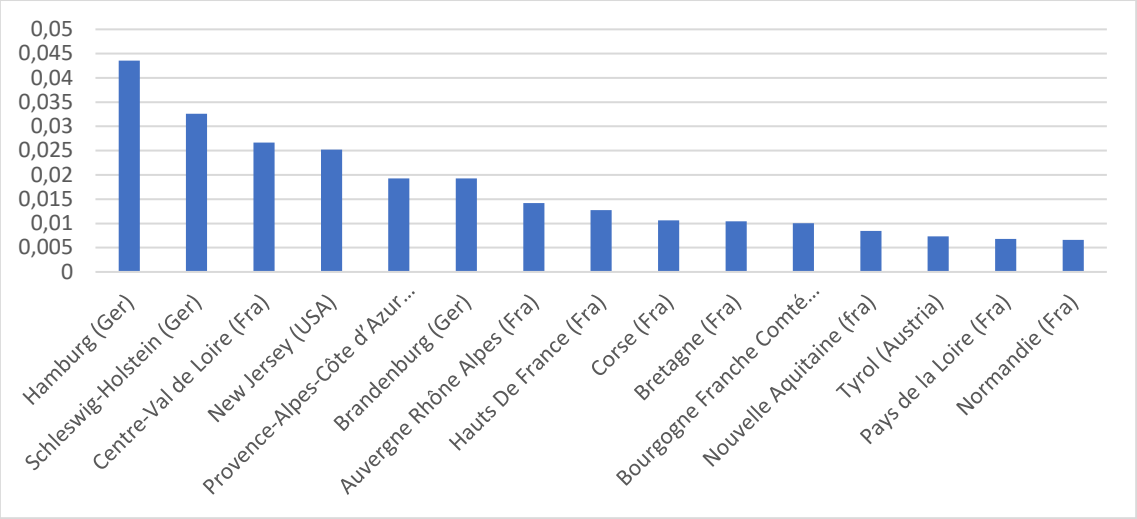

Figure A2. Most relevant regions for import of made-in-Italy fashion

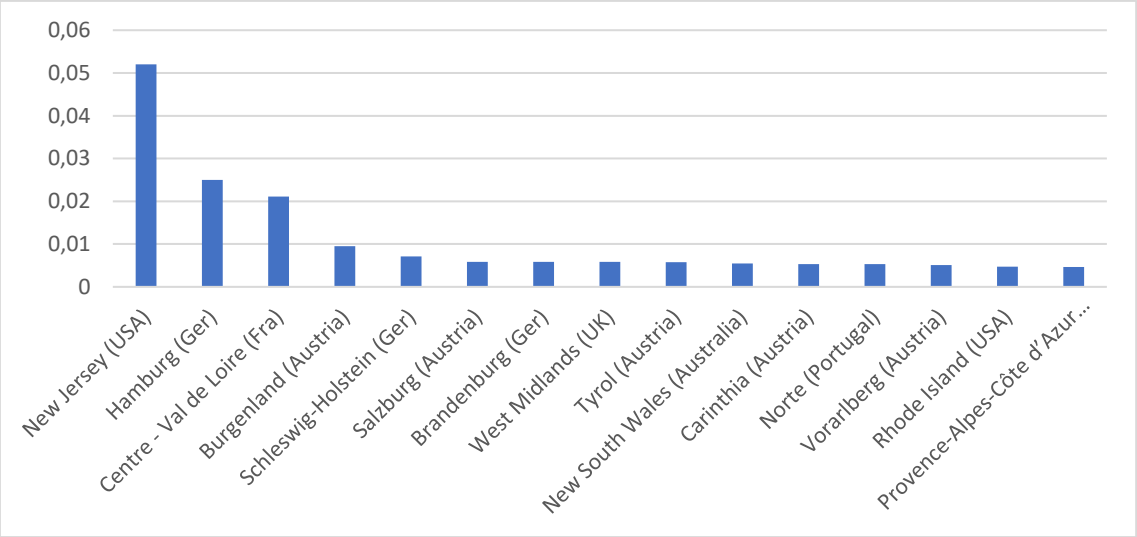

Figure A3. Most relevant regions for import of made-in-Italy mechanical engineering

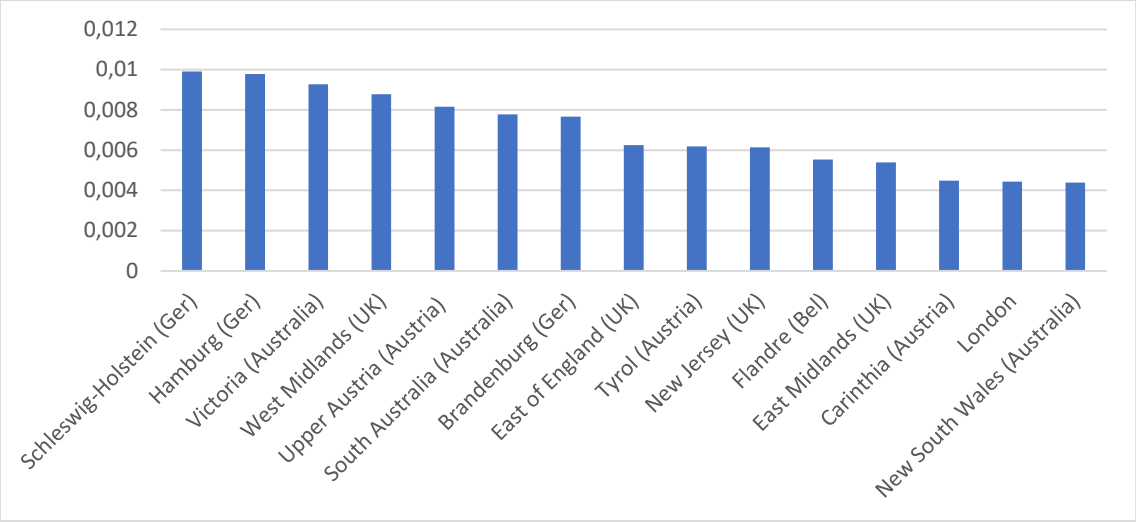

Table A1. Robustness checks: OLS and quantile regressions

Variables	(1) Total MiIT products (OLS)	(2) Total MiIT products (QR)	(3) MiIT food (OLS)	(4) MiIT food (QR)	(5) MiIT fashion (OLS)	(6) MiIT fashion (QR)	(7) MiIT mechanical engineering (OLS)	(8) MiIT mechanical engineering (QR)
Italian Migration	0.329***	0.381***	0.468***	0.485***	0.333**	0.415***	0.345***	0.310***
	(0.0843)	(0.0713)	(0.140)	(0.0812)	(0.132)	(0.0840)	(0.0841)	(0.0855)
Italian Universities	1.200***	0.840**	1.835***	0.961**	1.689***	1.003**	1.387***	0.722*
	(0.316)	(0.331)	(0.462)	(0.377)	(0.561)	(0.390)	(0.334)	(0.397)
Italian Schools	0.663**	0.247	0.525	0.380	0.953*	-0.310	0.641*	0.745
	(0.334)	(0.513)	(0.574)	(0.584)	(0.567)	(0.604)	(0.337)	(0.615)
Geographical Distance	-0.985***	-0.588**	-1.686***	-1.514***	-1.851***	-1.067***	-1.042**	-0.366
	(0.294)	(0.294)	(0.441)	(0.336)	(0.490)	(0.347)	(0.470)	(0.353)
GDP PC	-0.105	0.201	-0.609	-0.0865	-0.320	-0.0419	0.0827	0.262
	(0.242)	(0.199)	(0.465)	(0.227)	(0.284)	(0.235)	(0.228)	(0.239)
Euro Currency	-0.814	-0.165	-0.922	-1.007	-1.729	0.338	-1.784*	-0.437
	(0.530)	(0.539)	(0.694)	(0.614)	(1.116)	(0.635)	(1.021)	(0.647)
Capital	-1.020*	-0.864	-1.612*	-0.714	-0.261	-0.901	-1.862**	-1.691**
	(0.556)	(0.551)	(0.916)	(0.628)	(0.630)	(0.649)	(0.727)	(0.661)
Border	-0.446*	-0.219	-0.848**	-0.708	-0.315	-0.0281	-0.760***	-0.521
	(0.267)	(0.742)	(0.387)	(0.846)	(0.404)	(0.874)	(0.289)	(0.890)
Remoteness	0.0312	0.395	-0.719	0.293	0.0455	0.0413	0.301	0.570
	(0.503)	(0.407)	(0.985)	(0.465)	(0.581)	(0.480)	(0.533)	(0.489)
Constant	25.28	0.935	68.89	14.64	32.98	22.35	10.19	-10.03
	(25.84)	(19.04)	(51.96)	(21.71)	(28.19)	(22.45)	(25.68)	(22.85)
Observations	147	147	147	147	147	147	147	147
R-squared	0.554		0.544		0.383		0.360	
Pseudo R-squared		0.3524		0.4284		0.3230		0.2373

OLS regressions have the dependent variables transformed with the inverse hyperbolic sine of the original values. Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.

Table A2. Robustness checks: additional measures

Variables	(1) Total made-in-Italy products (PPML)	(2) Made-in-Italy food (PPML)	(3) Made-in-Italy fashion (PPML)	(4) Made-in-Italy mechanical engineering (PPML)
Italian Migration	0.303***	0.309**	0.377***	0.227***
	(0.0919)	(0.131)	(0.114)	(0.0749)
Italian Universities	0.515*	1.203***	-0.0905	0.826***
	(0.296)	(0.330)	(0.407)	(0.265)
Italian Schools	0.536**	0.657**	0.570*	0.412
	(0.245)	(0.276)	(0.334)	(0.251)
Dante Societies	-0.00311	-0.168	-0.0402	0.0957
	(0.231)	(0.264)	(0.319)	(0.244)
Geographical Distance	-0.469***	-0.679***	-0.669***	-0.157
	(0.170)	(0.210)	(0.215)	(0.191)
GDP PC	-0.0695	-0.0317	-0.238	0.0968
	(0.181)	(0.205)	(0.197)	(0.209)
Euro Currency	-0.357	-0.595	-0.443	-0.0751
	(0.301)	(0.371)	(0.387)	(0.325)
Capital	0.0484	-0.354	0.654**	-0.662*
	(0.271)	(0.293)	(0.301)	(0.389)
Border	-0.352*	-0.307	-0.222	-0.663**
	(0.203)	(0.204)	(0.268)	(0.262)
Remoteness	0.134	0.241	-0.259	0.375*
	(0.226)	(0.357)	(0.398)	(0.193)
Constant	15.83	-3.538	22.86	-14.50
	(11.91)	(18.20)	(19.55)	(10.37)
Observations	147	147	147	147
R-squared	0.584	0.628	0.507	0.461

Robust standard errors in parentheses. *** p<0.01, ** p<0.05, * p<0.1.